Volunteer Firemen

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Volume 4, Number 6 **BOSTON, MASSACHUSETTS** **June, 1937**

Pictures, Inc. **Will the death of 37 persons in the *Hindenburg* spell the end of travel by lighter-than-air craft?**

Airships' Doom?

Stunned World Sees End of Zeppelins — Those in Fire Fighting Business Only Surprised Hydrogen Blowup Did Not Occur Sooner

THE German airliner *Hindenburg* blew up as it was landing at Lakehurst, New Jersey, naval airship base, at the end of its regular scheduled run on May 6, 1937. Camera men and newspaper men on hand to record the arrival of the ship gave the world a picture of a fire disaster that many will never forget. A stunned world waits for the findings of the board investigating the now inconsequential matter of what kind of spark set off the bag of hydrogen. Many are predicting the end of lighter-than-air craft.

By Horatio Bond
Managing Editor

The completeness with which the disaster was reported, and its suddenness, surprised all except a relatively few persons in a position to know the technical matters involved. Those in the fire fighting business familiar with the characteristics of hydrogen gas could only wonder why such an explosion had not occurred sooner. Their surprise was not that the bag had blown up, but that 73 of the 109 persons aboard got out of the fire alive.

This miracle was explained when complete reports of the fire were in and a careful study had been made of the remarkable photographs and motion pictures obtained. The fire started at the rear of the ship and spread toward the front. The gas itself, released from the bag, burned hundreds of feet in the air. The ship was 803 feet long, and from the pictures it can be seen that it was only 200 or 300 feet in the air when it took fire. It settled, tail first. The burning gas was released, but the ship appeared to fall away from the gas as

Pictures, Inc.

Among the temporary ground crew were members of near-by volunteer fire departments. They helped with rescue work and treatment of persons burned. In all, 11 departments responded. The Lakehurst station was nearby and its truck, shown in the picture, was the first to arrive.

it burned. The control room and the passenger spaces to the front, were the last reached by the fire. The ship sank rapidly, rather than suddenly crashing, and as the forepart of the bag neared the ground, the passengers and crew were dropping from the bottom of the control room and the bottom of the bag. The movie shots show human beings looking for all the world like fleas dropping off a singed dog.

Most of the lives saved may be traced to the fortunate circumstance that the ship was near the ground when it took fire. They also owe something to certain special qualities of hydrogen gas. Most persons are familiar with the fact that in order to have an explosion it is necessary for the explosive gas to be mixed with air. Hydrogen tends to mix with air at a more rapid rate than most gases. If hydrogen is released in the open air it may diffuse so rapidly that it does not reach the slight concentration of a 4 percent mixture with air necessary for an explosion.

HYDROGEN is a very dangerous gas, however. In concentrations above that just mentioned, it will explode in pretty much any mixture with air, be it "rich" or "lean". It is this wide explosive range which makes the deliberations of those investigating the source of ignition seem principally of academic importance. Any chance spark or heat source could set the hydrogen off. Mention has been made of likely possibilities: smoking, motor back-fire, static discharge or an incendiary bullet.

Among those hauling on the ropes dropped in the preparations to land the zeppelin were many who are members of the volunteer fire departments of Lakehurst and vicinity. The landing process needed a large ground crew, and most able-bodied men in the vicinity had been induced to give a hand to the work. One civilian on the ground died of burns. On the field was a piece of fire apparatus, the property of the naval base. A couple of blocks from the gate to the field was the Lakehurst Fire Headquarters, where there was a pumper. This was the first outside apparatus to arrive and was on the scene within a minute of the explosion. Firemen in other communities round about in many cases could see the ship as it came in and saw it break into flames. That's all the alarm they needed to be on the way. Companies responding from within 5 to 15 miles were those from Whitesville, Lakewood, Southard, Point Pleasant, Toms River and Beachwood. From a greater distance came a company each from Pemberton and Marlboro, and Trenton, the state capital, and Jersey City sent pieces. Companies on arrival went to work with chemical and booster lines. Water was not readily available where the ship fell in the middle of the landing field. One line laid from a hangar several thousand feet distant was used in a relay hook-up participated in by the pumpers from Lakewood, Toms River, and Point Pleasant. This line was used principally to keep under control the burning tanks of fuel oil.

U. S. Navy officials had no illusions about the hydrogen danger and it is reported that they arranged as often as possible for the Navy's remaining lighter-than-air craft to be somewhere other than at Lakehurst when the *Graf* or *Hindenburg* were around.

Hydrogen is not the only gas which may be used in dirigibles. The United States has used helium, a gas which will not explode. Helium gives about 12 percent less lift than an equal volume of hydrogen but is more than 30 times as expensive. It is obtained in limited quantities from the natural gases of certain oil fields in the Texas Panhandle. The U. S. Bureau of Mines there produces helium for the U. S. Government and it is apparently available nowhere else in the world.

Germany used hydrogen (1) for its greater lifting power, (2) because she had a background of experience in designing ships based on its use, and (3) because of the high cost of helium. She could have purchased helium for peacetime transport use but perhaps she did not want to get a lot of ships built for helium only to find the supply cut off in event of war.

So indelibly is the hazard of hydrogen fixed in the public mind by the *Hindenburg* catastrophe that the day of German hydrogen-filled craft is probably at an end. Future progress in lighter-than-air flying is up to the United States but the prospects are not bright. The U.S.S. *Akron* crashed in an electrical storm off the Jersey Coast in 1933 and legislators thereupon shelved a $17,000,000 program for a transatlantic airship line. Prominent members of the House and Senate naval and military affairs committees, interviewed following the *Hindenburg* disaster, all implied that the airship was doomed. While this writer cannot pose as an air expert, there is no conclusion from the fire on the *Hindenburg* which warrants this smug attitude. The *Hindenburg* was the 129th zeppelin. The necessity of the United States giving up lighter-than-air craft after an experience involving only four ships is open to question. For Germany had not only the problems of structural design and the elements to face, but operated under the acute fire hazard of flammable hydrogen. With the world's major supply of helium, the United States has a big jump on the fire hazard. The technical problems of controlling fires on both land and sea have been largely mastered, and there is no reason why the same conquest cannot be made of fire dangers in the air.

What Price a Glorious Fourth?

NO DAY on the calendar is like the Fourth of July in the United States. The fire department of every town is on duty and takes an important part in the local celebration. From the veteran fire chief to the latest rookie all the men are on duty in uniform and are the envy and admiration of the citizens.

Traditionally, fireworks have been an important feature of the Independence Day celebration. Even the fire station is likely to be a poor place for the timid soul with a weak heart. Firemen are strong men and know how to take care of themselves. Some fire chiefs even depend upon the "boys" in their department to help them "dispose of" giant crackers and other dangerous fireworks which have been confiscated because they exceed the safe limits prescribed by law. The "boys" may be expected to cooperate in this "duty" with the same indifference to personal danger that they display while battling the flames in some neighbor's home.

There can be no doubt that firemen will help celebrate the Fourth with full enthusiasm again this year. It is wise, however, to plan for the event. Many communities have Fourth of July committees on which the fire department should be well represented. The fire department is responsible for the fire prevention education of the community and its example will carry great weight with the majority of the citizens. If the fire department is indifferent to the reckless use of fireworks, false alarms and bonfires, they cannot expect people to take them seriously when, during Fire Prevention Week, firemen state with grave faces that fire hazards must be eliminated or the town may suffer.

The average fireman can usually handle fireworks skillfully enough to avoid injury, but last year the Nation's number one fireman, Fire Chief and Commissioner John J. McElligott of New York City was painfully injured in a fireworks accident.

Although firemen may be willing to take a chance with fireworks themselves they are usually careful to prevent their children from getting fireworks to play with. They have seen the results of such accidents and the picture of their boy or girl going through life blinded is one which doesn't appeal to them. Doctors tell of the pitiful scenes at hospitals in places where promiscuous use of fireworks is permitted on July 4th. Another danger of fireworks which should always be remembered is that even the slightest fireworks burn or injury may possibly result in the fatal tetanus (lockjaw).

Pictures, Inc.

The control room and the passenger spaces, shown by arrows, were the last portions of the big bag to be reached by the fire. At the time this picture was taken, passengers and crew were dropping to the ground and making their miraculous escape.

One other angle of the fireworks problem of importance is the danger of sweeping fires resulting from misdirected firecrackers, rockets, or other fireworks. Fires from fireworks cause an average loss of over a million dollars a year in the United States. Starting in 1866 when practically the entire city of Portland, Maine, was destroyed by a fire caused by a firecracker, the record has included many devastating fires. More recently Spencer, Iowa, was swept by a conflagration caused by the ignition of the fireworks stock in a drug store. Last Fourth of July a large portion of the town of Remsen, Iowa, was also destroyed by a conflagration caused by a firecracker. As a result of these two fires Iowa has joined the long list of states and cities which have decided that the only practical way to prevent such tragedies is to limit the use of fireworks to properly supervised public displays.

Fireworks properly handled may add to the Independence Day celebration; there is no need for them to be a cause of tragedy. When making plans for a July 4th celebration, why not adopt the plan successfully followed by a number of departments of giving the youngsters of the town the best show of fireworks that they have ever seen. A real fireworks display is not costly and is easily financed if the members of the department pool the sums which they might otherwise spend on individual fireworks displays which are neither spectacular nor impressive. Such a display greatly simplifies the problem of putting across and enforcing a local fireworks ordinance to eliminate Fourth of July fires and injuries. Such a program would sell the department to the public and interested citizens would probably be glad to contribute to the support of a good fireworks show.

Reducing Incidental Fire Damage

Proper Arrangement and Packaging of Merchandise to Minimize Water and Smoke Losses is Important Feature of Modern Salvage Methods

THE realization that a large percentage of fire waste is actually water loss has resulted in an effort by fire fighters to reduce the water damage. The common method is to spread waterproof blankets or salvage covers over stock and to direct excess water to points where it can readily be drained. The experience of fire departments, salvage patrols, insurance adjustment and appraisal companies has been drawn upon by the N.F.P.A. Committee on Salvaging Operations in compiling their 1937 report. This report, which has been made available to N.F.P.A. members, contains a discussion of salvage principles, including methods of storing goods, the effect of water on various stocks, and the probable salvage value of various types of merchandise.

Since the intensity of the fire and therefore the amount of water, smoke and debris will vary for different fires, the amount of salvage possible for stocks of like kind will not always be the same. There is, however, a definite relation between certain characteristics of merchandise and the salvage to be expected. These characteristics are generally analyzed under the headings: Removability, Combustibility, and Damageability.

The element of time enters largely into any fire. In many instances, the period required for fire to spread from one point to another can be utilized by removing articles, which would otherwise be damaged, to some point of safety. This is a natural impulse on the part of the individual, but is seldom practiced in a systematic way except by well-trained fire fighters. Such fire departments make it a point to move or otherwise protect merchandise before directing water streams when possible. Removability is of course dependent on size and weight. Removability figures in exposure fires as it is frequently desirable to move goods away from hot walls or from the vicinity of windows and doors.

The ease with which material will burn or its susceptibility to burning enters largely into the amount of salvage one may expect. The combustibility of the stock is not always dependent on the stock itself, but may be largely contributed to by the way the stock is wrapped, boxed or packed. Other factors are the amount on hand and arrangement of stock. Merchandise spread out for display may increase the area affected by fire. Improperly piled merchandise may, because of concealed spaces and inaccessibility, be subjected to great damage. Fire in such piles of stock cannot be easily located or reached, nor is the stock as easily protected with salvage covers.

In many fires the extent of damage possible will be largely dependent on the method of packing or wrapping of merchandise. The inherent ability of certain stocks to withstand combustion, heat, water, smoke, falling debris, breakage, dirt and the removability of the stock are factors affecting salvage.

In general, merchandise in transit, in warehouses or on display should be protected against water damage and packed in units which may be readily handled. An ideal container would be strong, waterproof, resist smoke, be readily handled and be fire resistive. However, waterproofing will necessarily involve the use of oil, wax, asphaltum, or other compounds. The fire hazard due to an accumulation of such treated wrappings when unpacking must also be considered.

Water has a tendency to flow down side walls, regardless of the type of construction. For this reason, stock should not be piled against walls or columns. All stock should also be set up on skid platforms and not stacked directly on the floor. To facilitate the spreading of salvage covers, a space of at least three feet should be left between the top of the stocks and the ceiling.

A few rolls of waterproof paper kept in the vicinity of valuable machinery or stock which might be damaged by water can be used as a temporary covering. These papers will resist small solid streams of water fairly well; withstand discharge from automatic sprinklers; and hold a pool of water indefinitely. Such paper cover-

Acme

The stock in this store was not arranged to facilitate salvage operations and considerable damage resulted although much of the contents were incombustible. Store shelving should be arranged to prevent damage by water running down the walls and stocks should not be piled close to the ceiling so as to obstruct the spreading of salvage covers.

ings do not delay or obstruct sprinkler action.

Where possible stocks should be piled so as to be protected by one standard 12 by 18 ft. or 14 by 18 ft. salvage cover. In addition, various articles such as absorbent fibres and rolled paper require certain aisle space to provide for expansion due to absorption of water.

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Tire's Life About 5 Years But Trading Them Yearly May Pay

TIRES used on fire apparatus very rarely wear out, for seldom are they run more than 500 miles per year. Replacements are made because of deterioration or abuse rather than because of wear. No fire department officer wants to run the risk of having a tire blow out while responding to an alarm and perhaps causing an accident to the apparatus or injury to the men riding on it—not to mention the possible life and property loss from fire due to the delayed arrival of the fire department.

The leading tire companies apparently agree that tires should not deteriorate on fire apparatus before 5 years, unless subjected to abnormal heat conditions, or exposed to strong sunlight or allowed to stand in oil or water for long periods of time. Most tire companies are now using an age-resisting compound in their tires which has extended the normal life of tires several years from the standpoint of deterioration.

While generally the tires on fire apparatus may be expected to give at least 5 years service the N.F.P.A. Committee on Farm Fire Protection states that due to deterioration tires may not be reliable on rural apparatus for more than 3 years. This is because tires on rural apparatus may not receive the best maintenance and due to the abuse to which tires may be subjected on rural roads. The Committee makes the suggestion that tires on apparatus be replaced annually to make certain that fire equipment will always have tires in first class condition. The tires traded in should bring a good allowance as they will retain much mileage suitable for use with ordinary commercial vehicles.

One fire chief has made the suggestion that other trucks used by the community often have the same size tires as the fire trucks so that these other trucks could wear out the tires taken off fire trucks. In this way fire trucks would always have new tires, with no waste to the municipality.

International

Heavy smoke is extremely damaging to contents of stores and warehouses, often causing severe losses in adjoining properties not reached by fire. Proper packaging of goods is an important factor in reducing smoke and water losses.

One tire manufacturing company recommends that when tires have been in service for 5 years that they be dismounted in the presence of a properly qualified tire man. By flexing the casings to discover whether or not sidewall or shoulder cracks exist, and by carefully inspecting the tubes for checking, cracks, brittleness, or other signs of lack of serviceability, the tire man can determine whether or not the tires can safely be used for another year or two.

To determine the practice of replacing fire apparatus tires in village fire departments in the State of New York, the New York State Bureau of Municipal Information at Albany recently sent out a questionnaire on this subject. Fire departments in 23 villages reported specific data. Two reported that tires could be run as long as 8 or 10 years if there were no cuts, bruises, or leaks in the tires, and four said that tires should be replaced with new ones as often as every 1½ or 2 years. Eleven said that the safe life of tires was from 5 to 6 years. The average for the 23 departments was 5 years.

In several cases it was reported that the tires were changed at the end of the set period of safe life regardless of their mileage. In other cases the figures reported were the recommendations of the fire chiefs, and because of insufficient funds could not always be carried out in practice.

One chief decided that after nine years of running, the tires on his pumper should be replaced. Village authorities, however, informed him that he must wait six months until an appropriation could be provided, and in the meantime he should drive slowly and not inflate the tires too high. Before the six months passed, one tire blew out—so the purchasing committee got busy. Another chief said that his village "believes in using tires until they blow out and someone may be injured." Such experience appears to confirm the recommendation for renewal of tires after 5 years.

Workmen's Compensation

Volunteer Firemen Belonging to Departments Under Municipal Control Protected in Most States — Independent Companies Not Always Covered

BACK in 1910 progressive steps were first taken in the United States to provide the working man and his family with necessary funds in case he is accidentally killed or injured while on the job. Today workmen's compensation or employers' liability laws are on the statute books of at least 44 states, and some 17,000,000 workmen and their families have this protection. Such laws have been a great incentive to employers to prevent accidents, and today there are fewer persons killed or injured in places of employment than on highways, homes, and public places.

Most of these state laws apply to municipal employees as well as to employees of private business or industry. Not all volunteer firemen, however, are considered to be municipal employees and may not come under such acts. The laws vary a great deal from state to state.

Every fireman is vitally concerned about his own and his family's welfare in case of accident. Fire department members owe it to themselves and their dependents to study the workmen's compensation laws in their state to see whether or not they come under the workmen's compensation provisions. A volunteer fireman's fire duties are often more hazardous than the duties of his regular or private employment.

There are many different ways in which volunteer fire companies or departments are organized. Some are entirely independent of the local government. The majority, however, are under some degree of control of the city, town, village, township, or special district governing body. Employers, including cities and towns, are required to bear the cost of workmen's compensation and private employers are generally required to provide workmen's compensation insurance. Where companies or departments do not operate under the control of the local government there is difficulty in some states of obtaining workmen's compensation in case of accident to any of the firemen.

In the strict sense, "volunteer" firemen receive no pay for their services. In Ohio, only members of lawfully constituted fire departments under appointment or contract of hire at a definite rate of pay, come under the workmen's compensation act. Where these conditions are not met, volunteer firemen in the state are forced to assume their own risks, or to take out individual insurance policies, or to take out a special accident policy covering the company or department as a group. When responding to calls outside the city or village limits, Ohio volunteers are covered by the act if they have officially been ordered to go.

SOME state laws such as those in New York, New Jersey, and Nebraska base the compensation paid a volunteer fireman for injury in line of duty upon the salary or wages he receives from his regular employment. New York laws have for several years provided accident disability and death benefits for volunteer firemen, but in 1935 a new law was passed to bring them within the provisions of the workmen's compensation act and to base the benefit payments upon earnings in his regular employment.

The New Jersey law contains a further specification that benefit payments to volunteers are not to exceed $20 per week. The Nebraska law provides that if the volunteer is not regularly employed by some other person, it will be assumed for the purpose of determining benefits to be paid him that he is receiving $35 per week. The Nevada workmen's compensation act assumes that a volunteer's salary is $150 a month, and the South Dakota act $27.50 per week. Michigan does not assume a definite salary, but fixes $27.50 per week as the maximum compensation to be paid.

With state law provisions such as these there is no doubt as to whether volunteer firemen are included or how benefit payments are to be determined.

PROVISIONS of workmen's compensation laws which are generally regarded as standard include all necessary medical care and the payment of one-half, or preferably two-thirds, of salary or wages. Compensation payments are graduated according to the degree of disability. In case of death, payments are made to the workman's dependents.

Even though a volunteer fireman comes under the workmen's compensation act of a state, the act does not necessarily apply if he is injured or killed while on fire duty outside the city or town limits. The Wisconsin law clearly specifies that the fireman at the time of the accident must be performing service growing out of and incidental to his employment, and that it also applies when he is responding to a call for assistance outside of the limits of the city or village by which he is employed, unless such calls are made in violation of an ordinance, resolution, or order of such city or village. In some other states the laws are not clear on this point, and although a fireman performs fire duty outside the city at the direction of city authorities, it is possible that workmen's compensation may not apply to him.

WORKMEN'S compensation laws and pension laws are not the same, but some pension acts provide compensation for injuries. Arizona and Utah cover volunteer firemen in their pension laws as well as in their workmen's compensation laws, but specify that the volunteers cannot draw compensation under both. In Maryland a volunteer fireman disabled in the line of duty receives $360 a year, and in case of death incurred in active service the widow receives $240 and children under 14 years of age $60 per year.

Many of the present state workmen's compensation laws are not clear as to their provisions for volunteer firemen. Iowa laws, for example, do not extend to volunteers any protection other than hospital and medical treatment for injuries incurred in line of duty. It seems that Iowa towns do not even have authority to use public funds to pay for group accident insurance on volunteer firemen. However, many of the towns do it without authority. About one-third of the state laws do not make workmen's compensation compulsory, but allow employers to decide whether or not they want to come under the provisions of the law.

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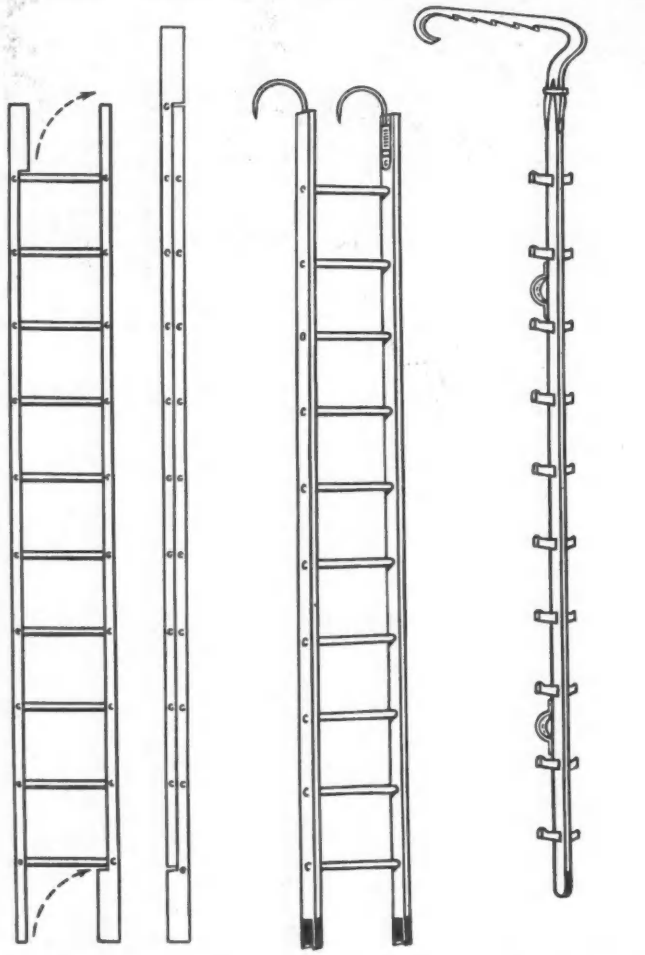

Special Ladders

FOLDING ladders are easy to carry up stairways, through small openings and into attics where firemen find it difficult or impossible to take ordinary ladders. The rungs are hinged at each beam and the ladder folds into a single pole as shown in the sketch. Some are made with square beams and some cylindrical. They take but little space on the truck. Lengths range from 10 to 20 feet.

Roof (or hook) ladders are standard equipment among the ladders carried on fire trucks. They are essential for getting to any part of a sloping roof for ventilation work, removing burned shingles, and for other work. The ladder may be used as a regular ladder by leaving the hooks folded between the beams. Common lengths are 12 to 20 feet.

Pompier (or scaling) ladders are principally used at drill towers to give men confidence in climbing the outside of buildings. They are also carried on apparatus for use in reaching places inaccessible for other ladders. These ladders may be used singly or in pairs.

Problem Questions
FOR JUNE

Suggested for discussion at company and department meetings this month

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What are some of the special types of nozzles useful in fighting cellar fires?

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What are some of the fire problems resulting from automobile trailers and trailer camps?

Watch for the answers in the next issue of VOLUNTEER FIREMEN

Two pompier ladders and men working as a team are desirable when making rescues from upper floors. This is hazardous work and requires proper drilling. The pompier ladder consists of a wooden spar with rungs about 16 inches long placed through it. On the inside edge of the spar there are two brackets to hold the ladder away from the wall and allow room for the hands and feet when climbing. The long hook at the top of the ladder is provided with teeth to hold the ladder securely when the hook is placed over a window sill. Common lengths are 12 and 16 feet.

In climbing a pompier ladder the hands grasp the central spar and not the rungs which are cupped to fit the feet. Men climbing a pompier ladder always wear a life belt having a large snap hook which may be fastened to the beam of the ladder leaving the hands free for rescue or other work.

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Discussion Subjects

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Q. For how many years is it safe to leave tires on fire apparatus before replacing with new ones?

A. Five years safe service may usually be expected from tires on fire apparatus. However, annual trade-in may be advantageous. See page 5 for full discussion.

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Q. Do workmen's compensation laws apply to volunteer firemen?

A. Yes, in many states, but local status should be investigated. More complete details are given on page 6.

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Volunteer Firemen

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In Case You Miss an Issue Every member of the Volunteer Firemen's Section is guaranteed a copy of VOLUNTEER FIREMEN each month. In case you miss an issue, write the editors promptly, and we will mail another copy at once. With a membership in the section of over eleven thousand men there is bound to be an error now and then in the mail service.

Don't do like one man in Virginia did. When the other twenty-three members of his company signed up to renew their membership for another year, instead of a "paid" mark after this man's name there was a note to the effect that the post-office had delivered only two issues the past year. So write us when something goes wrong—delivery is guaranteed.

Inspection Work of a Fire Company The *Crosby-Fiske-Forster* Handbook of Fire Protection published last year by the N.F.P.A. treated, in some detail, the planning and execution of inspection work by a fire department. The problem of the fire company was given special attention, and as an illustration of procedure the district assigned to Engine Company 4 of Cambridge, Massachusetts, was described. This district was selected because it had a good variety of occupancies and hazards.

Of interest, therefore, is the procedure which this company, under Captain John Gibson, has followed in handling its inspection work. The major hazards or "target" hazards of the district are 95 in number and include lumber yards, bulk oil storage stations, industrial plants, mercantile buildings, public and institutional buildings, and churches. This group of occupancies is the most important problem of the district since it is in these properties that there are concentrations of burnable values. Captain Gibson arranges that he himself, or one of the members of the company shall get into most of these properties at least once a month, going right through them with an eye out for bad housekeeping especially.

There are 254 small unit properties in the district including small retail stores, repair shops and gasoline filling stations. These, together with larger properties which have low occupancy hazards, such as churches and public buildings, he has inspected once in three to six months according to conditions. In spite of the large number of industrial properties, the district is predominantly residential, with a total of 1603 buildings occupied as dwellings or principally as such. An annual inspection of basements of these buildings is made.

Cooperation of Cambridge citizens is good, and only one case was reported during the year where permission to make an inspection was refused the men of Engine 4. Most occupants of dwellings are glad to comply with the firemen's suggestions. Smoke pipes from heaters cause the most trouble, but rubbish conditions and wiring are looked over pretty carefully.

This inspection plan really works. There were only 89 alarms in its district last year, and these were mostly trivial. The total amount of 2½ inch hose stretched during the year would make only a good load for the pumper, 1340 feet. Water was passed through large hose only three times for a total of 40½ minutes. The big line was used a half hour on a barn fire, ten minutes on grass and rubbish, and half a minute to knock down a fire in a room of a building.

"The Best Way to Fight Fire" A 16-page booklet entitled "The Best Way to Fight Fire is to Prevent it from Starting" has just been published by the International Harvester Company, 606 South Michigan Avenue, Chicago, Illinois. Sixty-five pictures show how farm fires can be prevented.

In the introduction I. D. Goss (member N.F.P.A.) states that the money lost in farm fires each year in the United States would build 40,000 good homes or about 50,000 barns. Also, nearly 3500 lives are lost in these fires, and adding to this the terrific loss of time and the inconvenience, disappointment, and distress that result from the destruction of property by farm fires, the loss mounts almost beyond calculation.

355 New Members and 821 Renewals During the past month 355 men from the 17 fire departments listed below enrolled in the Volunteer Firemen's Section for the first time. In addition, 821 men in 35 companies renewed memberships. The total membership of the section is now 11,730.

Orland Fire Department, Orland, California.

Winters Fire Department, Winters, California.

Salmon Volunteer Fire Department, Salmon, Idaho.

Lake Mills Fire Department, Lake Mills, Iowa.

Bolton Fire Department, Bolton, Massachusetts.

Company No. 1, Lynnfield Centre Fire Department, Lynnfield Centre, Massachusetts.

Massachusetts Fire Prevention Association, Reading, Massachusetts.

Reading Fire Department, Reading, Massachusetts.

Vermontville Fire Department, Vermontville, Michigan.

Hobbs Volunteer Fire Department, Hobbs, New Mexico.

West Harrison Independent Fire Company, East White Plains, New York.

Citizens' Fire Company No. 1, Palmyra, Pennsylvania.

North Troy Fire Department Company No. 1 and 2, North Troy, Vermont.

Port Angeles Fire Department, Port Angeles, Washington.

Delavan Lake Fire Department, Delavan Lake, Wisconsin.

Marshall Fire Company, Marshall, Wisconsin.

Canadian Industries, Ltd., Brownsburg Volunteer Fire Brigade, Brownsburg, Quebec.

NEW CATALOGUES

This department is for the convenience of readers who wish to be advised of new products or services in the fire field. When writing for catalogues please mention VOLUNTEER FIREMEN.

American Steam Pump Co., Battle Creek, Mich. Bulletin No. 75 (Edition No. 4). Data on Barton pumps and fire streams.

The E. C. Brown Co., Rochester, N. Y. "Sprayers," Catalogue No. 41, 21 pages. Includes information on "Siren"—a 5-gallon size pump tank fire extinguisher.

Carpenter Manufacturing Co., 125 Broadway, Boston, Mass. "Master Lights", 4-page leaflet on hand lights and emergency lights for use by fire departments.

W. S. Darley and Co., 2810 Washington Blvd., Chicago, Ill. Literature illustrating and describing a complete line of fire apparatus and pumps.

Elkhart Brass Manufacturing Co., 1302 West Beardsley Ave., Elkhart, Ind. Catalogue F, covering complete line of fire protection brass goods, hose fittings, nozzles, extinguishers.

Federal Electric Co., 8717 South State St., Chicago, Ill. Bulletins Nos. 55 and 56. Complete details of Federal sirens.

The Fog Nozzle Co., 1520 East Slauson Ave., Los Angeles, Calif. "How to Use Fog Nozzles," 16 pages. Description of types of fog nozzles and their uses.

Gamewell Co., Newton Upper Falls, Mass. "Vitaguard", a manual, 40 pages. A complete description of the Vitaguard fire alarm system for volunteer fire departments and industrial plants.

Mine Safety Appliances Co., Braddock, Thomas and Meade Sts., Pittsburgh, Pa. "M.S.A. Combustible Gas Indicator," describing device used to test questionable atmospheres, prevent explosions and locate gas leaks.

Pyrene Manufacturing Co., Newark, N. J. "The Newest Development in Fighting Fires," Circular No. 161, 4 pages. Description of the "Phomaire" play pipe for making foam mechanically.

D. B. Smith and Co., Smith Building, Utica, N. Y. "Indian Fire Pump", Catalogue, 8 pages. Showing full line of Indian fire pumps, supply tank, carrying rack, repair parts, and pump tank extinguisher.

Membership Plan

Volunteer Firemen's Section, National Fire Protection Association

WHERE 20 or more firemen in a volunteer company or department affiliate with the Volunteer Firemen's Section the cost is 50 cents a year *per man.* Each fireman will receive one copy of VOLUNTEER FIREMEN, the monthly journal of the Volunteer Firemen's Section, mailed regularly to his home address. The company or department automatically becomes a member of the National Fire Protection Association and is entitled to full privileges of membership. All the literature regularly issued to N.F.P.A. members is mailed to headquarters of the company or department.

Membership may be applied for by one member of the company or department collecting 50 cents for each of the 20 or more members and making a single remittance for the group, or the company or department may take a membership for its men and make a single remittance from the company or department treasury.

Companies With Less Than 20 Members

Because of the large amount of material mailed to members, not less than $10.00 can be accepted from any company or department for membership dues. In the case of companies or departments with less than 20 men this means that the cost divided among them will be slightly higher per man. Of course, some such companies or departments may prefer to make a single remittance of $10.00 from the company or department treasury. In other cases a few interested citizens, not members of the company or department, may be glad to contribute 50 cents apiece to make up the required minimum of 20, so that the members may secure the rate of 50 cents per man.

These companies or departments have full privileges of N.F.P.A. membership as above, and each member receives the monthly magazine, VOLUNTEER FIREMEN, at his home.

FIRE WARDEN "CANNOT PRAISE INDIAN TOO HIGHLY"

D. B. SMITH & CO.
Utica, N. Y.

Maple Vista, Box 37
Saratoga Springs, N.Y.
March 29th, 1937

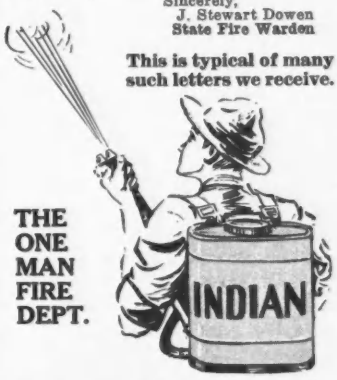
I am a Fire Warden in Saratoga County for the New York State Conservation Dept. I own a fire truck which I built with the aid of my fire fighting volunteers and which is equipped by the State.

I find that INDIAN FIRE PUMPS are the best for forest, brush spot and grass fires and cannot praise the INDIAN too highly. It uses only clear water, no chemicals to buy or bother with and I carry seven INDIAN FIRE PUMPS on my truck at all times, six filled with water and one extra. The INDIAN is a fire fighter that every fire department and home owner should be equipped with.

If there is any other information you desire, I would be very glad to furnish it. When I get a picture of my truck, I will send one to you.

Sincerely,
J. Stewart Dowen
State Fire Warden

This is typical of many such letters we receive.



5 gal. metal tank may be carried FILLED on truck ready for use. Extra strong construction, will not leak, puncture or rot.

Strong brass carrying handle. Carrying weight evenly distributed close to top of back, prevents rubbing and chafing. Tanks do not have to be propped up when filled with water. Tanks have heavy solid brass bottom to prevent rust or corrosion. All seams double locked and soldered.

Form-fitting ventilated tank allows continuous circulation of air between carrier's back and water tank. This prevents dampness, moisture and cold from water tank reaching the wearer's back. Complete freedom allowed arms and hands.

Send for Catalog

We will send complete literature describing our line of fire pumps. Testimonials from enthusiastic users are given exactly as sent us. Everyone interested in Fire Fighting and Fire Protection should be familiar with INDIANS. Write today!

MFD. BY

D. B. SMITH & CO.
416 Main St., Utica, N. Y.
Pacific Coast Agents:
Hercules Equip. & Rubber Co.
550 Third St., San Francisco, Cal.
Pacific Marine Supply Co.
1217 Western Ave., Seattle, Wash.
Western Loggers' Machinery Co.
302 S. W. 4th St., Portland, Oregon

Village Fire Equipment

If a Village Has a Water System, Here is a Kit Enabling the Organization of a Fire Department and Which Will Serve Until They Can Afford Motor Apparatus

By H. J. Clark, Chief Engineer, Oklahoma Inspection Bureau.

A TRAILER fire truck providing hose and appliances needed for a minimum of protection in small towns and villages having public water supplies but unable to finance or maintain a motorized fire truck is described by a bulletin recently issued by the Oklahoma Inspection Bureau. A trailer of this sort can be built in a local shop from old automobile parts at less expense than the conventional hand-drawn hose reels would cost new. The trailer also has many advantages over a hose reel.

This equipment is not intended for the larger or more prosperous villages that can purchase pumpers and maintain better fire protection facilities. It is not intended that the trailer be used to supplement other apparatus, but in occasional instances, it might serve this purpose or be used in conjunction with a pump attached to the front end of some available automobile or truck used for general purposes.

In Oklahoma there are probably 75 or more towns, having 200 to 800 population that have water systems serving from 4 to 20 hydrants supplied by 4- and 6-inch mains and elevated tanks. The water pressures vary from 30 to 45 pounds and will provide fair small streams direct from hydrants. Many of these towns have obtained water systems through P.W.A. or W.P.A. assistance. Fire fighting equipment has not been included in the projects excepting in a few cases where 500 to 600 feet of 2½-inch hose and two play-pipes were allowed. These towns spent all available funds for their water systems and are unable to buy more than a minimum of fire equipment, if any. Other towns have worn out hose and reels formerly in use and because of expense many have abandoned all effort to maintain fire protection.

The fire equipment trailer suggested consists of a hose body supported by two wheels and equipped with a drawbar for towing or pulling. Along the outsides of the body are racks for tools and appliances. On a frame above the hose body is a basket or rack for smaller hose, salvage covers, and other equipment. Ladders are carried on each side of this rack.

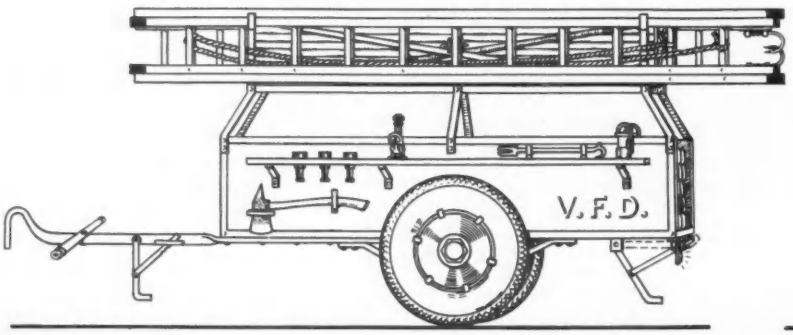
The following equipment carried is considered to be a minimum for good fire fighting practice in a small community.

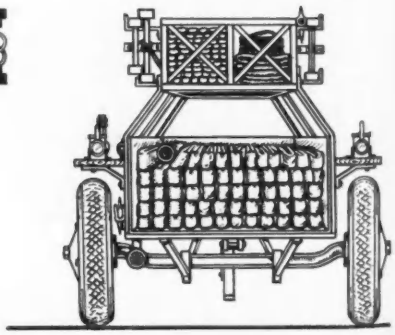
600 feet 2½ inch hose
200 feet 1½ inch hose
2 2½ inch shut-off nozzles (1 inch tips)
Extra nozzle tips (¾ and 1⅛ inch)
2 1½ inch shut-off nozzles (½ inch tips)
1 2½ to 1½ inch gated wye
2 hydrant wrenches
4 spanner wrenches
1 20 foot extension ladder
1 12 foot roof ladder
1 10 foot pike pole
1 axe, 1 claw tool
1 crowbar
100 feet manila rope (½ inch diameter)
2 electric hand lights
2 salvage covers
1 broom, 1 mop

Hand extinguishers were omitted from the list of equipment because such appliances on unattended equipment may not be maintained properly. In addition where the trailer truck will be used, response to alarms will generally be too slow to make the use of first aid appliances of great importance. The 1½-inch hose with small nozzles may be relied upon for reasonably speedy layouts and will extinguish many fires before they reach a size requiring larger streams. Buildings in which this equipment is kept may not be heated and equipment subject to freezing would be impracticable. If smaller streams are desired a section of garden hose or even smaller rubber hose fitted with adapters to slip on any faucet may be carried.

A trailer fire equipment should be kept where it will be safe from tampering and under reasonable supervision. It should also be in an accessible location to insure prompt response to alarms. A public garage is not always the most satisfactory location because the trailer may be obstructed, or the equipment borrowed and because of the danger of a fire starting in the garage. A separate room and doorway in the garage would improve such a location. Sometimes a small building can be obtained in the mercantile district for a fire station.

Such equipment might well be the basis for a volunteer fire department organization which could provide organized protection, trained fire fighters, and which would be likely to obtain motorized apparatus extending protection as the community grows.





VITAGUARD

Fire Alarm System for Volunteer Fire Departments

STREET FIRE ALARM BOXES PROPERLY DISTRIBUTED WITH REFERENCE TO FIRE HAZARDS PROVIDE THE MOST RELIABLE AND ACCESSIBLE MEANS OF TRANSMITTING ALARMS TO THE FIRE DEPARTMENT.

Fire Station Operating and Control Unit

Includes recording register, code signal transmitter, battery and charging equipment, testing and protection devices.

VITAGUARD
Street Signal Station

Provides protection against loss of alarms under disordered circuit conditions.

THE Vitaguard System may be extended to the protection of special fire hazards such as Institutions, Schools, Hospitals, Court Houses, Factories, and Mercantile Establishments within which automatic fire detecting features constantly guard the property.

Public Alarm Equipment automatically controlled by the fire alarm system directs the firemen to the location of fire.

Prompt Alarms Reduce The Fire Loss.

Plans and estimates furnished without cost or obligation.

Write for 40-page descriptive catalogue

THE GAMEWELL COMPANY

NEWTON UPPER FALLS, MASSACHUSETTS

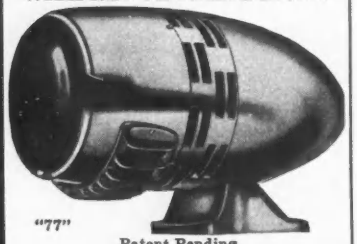
Specify

FEDERAL "77"

DOUBLETONE,

LONG ROLL SIREN

WITH RED FLASHING LIGHT



"77"

Patent Pending

Here is a siren with two distinct tones—a high, piercing tone to penetrate closed cars with a shriek for instant action—and a low, carrying tone that clears traffic for blocks ahead. To add to the carrying power, the frequencies of the two tones cross at regular intervals to produce an extra weighted beat that rolls ahead like the third wave at the seashore. You get two tones and triple power! And combined with this are the features of our famous C-5 Coaster Siren—the brilliant red or green flashing light beam, enabling traffic to both SEE and HEAR your warning—long roll of more than TWO MINUTES after current is shut off—grease sealed ball bearing motor — all-chrome finish. Write for New Bulletin No. 56 for complete details.

Federal Vertical Siren Mounted on Tower. Approved by the National Board of Fire Underwriters.

Federal VERTICAL Sirens are most practical because

(1) They distribute sound in a wide range in all directions.

(2) Rugged in construction to withstand all kinds of abuse.

(3) Entirely weatherproof housing finished in Red Duco withstands sleet, rain, hail and dust storms.

(4) They are equipped with special high speed, ball bearing Federal Siren motors.

Write for Bulletin No. 55 for complete details.

FEDERAL ELECTRIC CO.

8717 So. State St. Chicago, Ill.

Here's Money In Your Pocket!

Your Experience With Fire Extinguishers Has Cash Value in Pyrene Prize Letter Contest

EVERY fireman considers his personal experiences in fighting large fires of great value. However, Captain K. W. Bell of the Milo, Maine, Fire Department has found that his experience in controlling small fires with fire extinguishers has real money value. Captain Bell has again carried away first money in the Pyrene Prize Letter Contest. This makes a total of two firsts and one second prize that Captain Bell has received since this contest sponsored cooperatively by the Pyrene Manufacturing Company of Newark, N. J., and VOLUNTEER FIREMEN, was started.

FIRST PRIZE — $10.00

K. W. BELL, *Captain*

Fire Department, Milo, Maine

Extinguishes Hidden Blaze

"I work in a railroad repair shop which employs 250 men. We have a well equipped volunteer fire department to protect the company shops and dwellings. A recent local survey showed that 70 percent of all fires have been extinguished with hand extinguishers. In many cases watchmen have discovered fires started by workmen using acetylene torches during the day. These fires have smouldered for hours before suddenly breaking out and would have caused great damage had they not been extinguished by watchmen using 1-quart carbon tetrachloride equipment.

"One such fire occurred in the nose of a costly snow plow which was being repaired. The plow was so constructed that it appeared as though the fire could not be reached without causing considerable damage to the plow. However the fire chief ordered two 1-inch holes bored in the nose of the plow. The fire was attacked through these holes with 2 1-quart extinguishers and extinguished with practically no damage."

SECOND PRIZE — $3.00

EDMUND A. ZEBNER, *Captain*

Engine Company Two, Union, N. J.

Fireman Saves Own Car

"A short time ago I bought a quart-size carbon tetrachloride fire extinguisher to place in my car. Not long after purchasing it the extinguisher proved its worth in gold as I had an occasion to use it on my own car. I was driving out in the country with some friends when I smelled smoke. I paid no attention to it as I thought the smoke was due to a cigar one of my friends was smoking. Suddenly my car burst into flames under the dash board. Had it not been for the extinguisher I believe my car would have burned to the ground before a fire department could have been called as the fire happened in a very sparsely settled section of the State."

THIRD PRIZE — $2.00

BURTON TIFFANY

Fire Department, Norwich, N. Y.

$50,000 Block Saved

"One afternoon in 1933, we were called to a fire in a tea room in a $50,000 business block. A pot of grease which had boiled over was sending flames to the ceiling and up the side walls. The chief called for two foam extinguishers. The extinguishers worked perfectly, putting out the fire and a very small amount of damage resulted."

CONTEST RULES

1. Contestants in the Pyrene Prize Letter Contest must be members of their local fire department.

2. Letters are to describe actual experiences where any approved fire extinguisher of any make has saved lives or property.

3. Trade names may be used but will be deleted in publication. Publishers reserve the right to edit winning letters to permit publication.

4. Each contestant automatically vouches for the truth of the facts presented from his own or others' experience.

5. Only one letter may be submitted each month.

6. Letters must be legibly written in ink or typewritten on white paper, one side only. Preference will be given to letters not over 250 words in length.

7. Letters received after the 8th of the month will be judged in following month's competition.

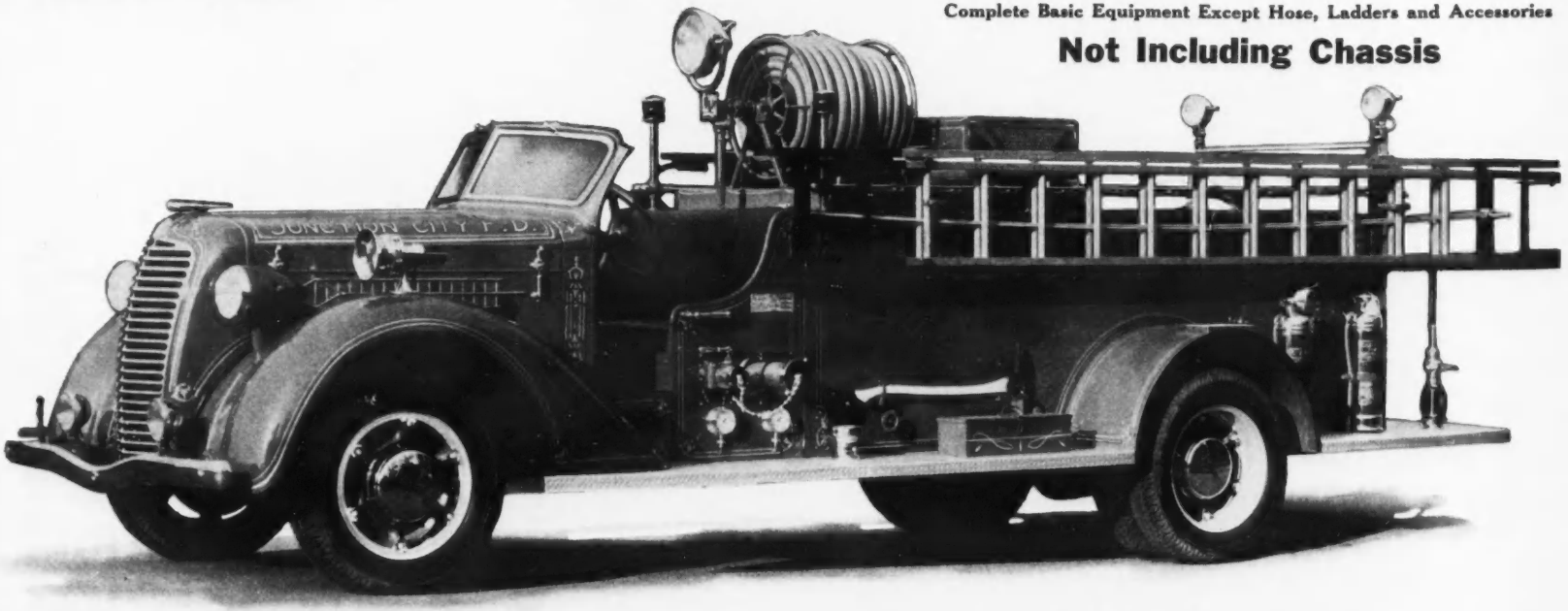
8. Monthly prizes in cash will be: 1st, $10.00; 2nd, $3.00; and 3rd, $2.00.

9. Address contest letters to Pyrene Prize Letter Contest, National Fire Protection Association, 60 Batterymarch St., Boston, Mass.

CHAMPION Fire Apparatus $1183 TO $1569

Complete Basic Equipment Except Hose, Ladders and Accessories

Not Including Chassis



Engineered and built on any commercial truck chassis you select — Ford, Chevrolet, Dodge, International, Studebaker, Diamond T, GMC, Reo, Federal — Built to your specifications for city, town, village, community, rural or forestry service. Meets all Underwriter Tests in the U. S. and Canada. Accepted by insurance bureaus in all states the same as more expensive apparatus. All Bureaus recognize Champion Fire Apparatus for maximum insurance rate reductions.

Champion Front Mounted Fire Pumps $290 to $425

More and more Fire Chiefs are realizing that when it comes to performance, dependability and value there is really only one Front Drive Fire Pump—the CHAMPION.

We're making Champions the best we know how and pricing them low for your greater savings. You can pay more, but you can't equal Champion value.

Champions are built so well that we unconditionally guarantee them for 10 years against everything. No buts, and, ifs,—a simple guarantee—If for any reason whatsoever, at any time within the 10 year Guarantee Period, your Pump fails to give satisfactory service, we will replace, free of charge, any defective part, or the entire Pump.

Write for Advertising Literature illustrating and describing the complete line of Champion Fire Apparatus and Fire Pumps, Direct Drive and Gear Drive, Midship and Front Mounted.

You don't have to buy a Champion on anyone else's say so. We have so much confidence in the ability of our Pump to sell itself by test that we'll ship you any Pump, Front or Midship Mounted, for 30 Days Free Trial. If the Pump fails to satisfy you, return it, all transportation charges paid by us. You can install any Champion Pump without mutilating the chassis, and we'll reimburse you for any expense of mounting and dismounting the Pump.

You can sell yourself and convince the most skeptical city officials that Champion is the best buy in Fire Pumps by your own easy Free Trial Test.

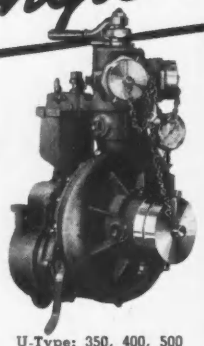
W. S. DARLEY & CO.
2812 Washington Blvd., Chicago, U.S.A.

PIONEERS of DIRECT FRONT DRIVE UNDERWRITER FIRE PUMPS

COMPLETELY INSTALLED *Without A Single Chassis Change!*

GEAR DRIVE

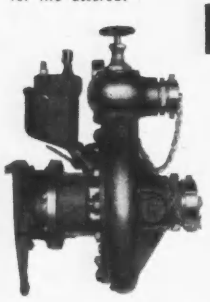
NOTHING FINER — Every U-Type Barton Pump is regularly equipped with built-in Gear Drive—truck motor operates at approximately ONE-HALF pump speed. With pump wide open and discharging at 250 lbs. pressure, motor loafs along — NO RACING—NO STRAIN! Long motor life assured.



U-Type: 350, 400, 500 and 600-gallon sizes.

DIRECT DRIVE

LOW PRICE — F-Type Pumps are also 250 lb. high-pressure units, having every U-Type feature except Gear Drive. They are Direct Drive pumps, operating at direct motor speeds, making for extremely low cost. We also build smaller Barton booster fire pumps at still lower prices.



F-Type: 400, 500 and 600-gallon sizes.

BARTON FIRE PUMPS

Ten years have passed since the first Barton Fire Pumps went into service, and these first pumps are still making good—for we maintain the highest standards of workmanship and use the finest materials money can buy.

"How is it then that a Barton Pump saves so much in first cost?"—a fair question, frequently asked. The answer is found in our unique design and in our method of mounting. For any capacity rating, a Barton Centrifugal Fire Pump is smaller, more compact and weighs less than older types. You buy no excess weight — no expensive gadgets. Lower cost, naturally!

But that's only half the economy story! Because of Front-Mounting (see above), a special expensive truck is not required. Any size Barton Pump can be used on a standard truck—completely installed and ready for service without a single chassis change, costing only a few dollars for mechanic's labor.

UNDERWRITERS' TESTED

Barton Fire Pumps meet and exceed Underwriters' requirements. They will handle clean or DIRTY water. They are Automatically Primed. And there's a size for every need and pocketbook. Write for full details today!

AMERICAN STEAM PUMP COMPANY

BATTLE CREEK, MICHIGAN . . . PUMPS AND PUMPS ONLY SINCE 1873

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